DOCUMENT RESUME

ED 303 913 EA 020 743

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TITLE Decisionmaking in the Planning & Design of Illinois Public School Facilities.
PUB DATE Mar 88
NOTE 45p.; Paper presented at the Annual Meeting of the American Education Finance Association (Lubbock, TX, March 16-19, 1988). Broken type throughout document.
PUB TYPE Speeches/Conference Papers (150) -- Tests/Evaluation Instruments (160) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Capital Outlay (for Fixed Assets); *Construction Costs; *Decision Making; *Educational Facilities Design; *Educational Facilities Improvement; *Educational Facilities Planning; Educational Finance; Elementary Secondary Education; Public Schools; School Maintenance
IDENTIFIERS *Illinois

ABSTRACT

This study investigates the factors influencing decision-making in public school planning and design and how those factors rank in importance. Data were gathered from Illinois architects, superintendents, and principals in 17 districts receiving Capital Development Board capital program funds, in fiscal years 1984, 1985, and 1986. Framing this study is the belief that education professionals differ according to their occupational orientation. Ethnographic data gathered from 12 semistructured interviews, 29 self-report instruments, and archival and trace materials revealed that participant perceptions did not substantially differ. Events leading to the planning and construction of Illinois facilities were loosely linked with the implementation of educational programs, but closely aligned with acquisition of fiscal resources. Consequent decision strategies to acquire funds for school facilties' improvement operated successfully in the informal political arena instead of the formalized "through channels" system. Appended are a four-page bibliography, a summary questionnaire, and two data tables. (JAM)

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DECISIONMAKING IN THE PLANNING & DESIGN OF ILLINOIS PUBLIC SCHOOL FACILITIES

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presented at

The Annual Meeting of
The American Education Finance Association
March, 1988

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ABSTRACT

The study investigates the factors influencing decision making in public school planning and design, and how those factors rank in importance. The study takes the approach that architects, superintendents, and principals view the role of facilities differentially based on individual professional orientation. It assumes the educational objectives of designers and managers differ, and as a result, educational settings may not properly serve the needs of users.

The study design takes a qualitative approach, using techniques of ethnographic investigation. Data was gathered from semi-structured interviews (N=12), a self-report instrument (N=29), and archival and trace materials. The study population consists of all superintendents, principals, and architects of Illinois public school districts receiving Capital Development Board capital program funds in fiscal years 1984, 1985, and 1986 (N=20 buildings in 17 districts).

Three informant districts were iteratively selected, based on willingness to participate by architects, superintendents, and princials for the interview portion. Analysis provides an database of cultural domains and linguistic idioms for developing an introductory taxonomy of facility decisionmaking. Additional review of policy documents and professional guidelines on the ageing of school structures, fiscal stress, and deferred maintenance added depth and triangulation of informant and self-report data.

The findings reveal participants did not substantially differ in their perspectives. Informants note events leading to the planning and construction of Illinois facilities in informant sites were only loosely linked with the implementation of educational programs, but closely aligned with acquisition of fiscal resources. Decision strategies to acquire resources were designed to operate sucessfully within a tacit, assumptive, policymaking world. This knowledge is used to circumvent an established, highly formalized system, and substitutes a more operative system for the improved anticipation, planning, and provision of adequate elementary and secondary facilities. Implications are explained, and recommendations made, for

educational administration and design practice, and for Illinois policymaking.

"Rapid change is characteristic of our times. To produce good facilities sooner, you either have to start earlier, spend more money, or anticipate better...." (Adinolfi, in Strevell, 1972).

Problem Statement

This a study is one whose problem statement revolves about an interest for several years in school facilities and how facilities interact with the implementation of educational programs. The problem is concerned with who makes decisions regarding school facilities and how those decisions are made; do those decisions influence planning, and how do the factors comprising these decisions rank in a decisionmaking process?

A review of the literature was undertaken looking at issues of school facility planning and construction (Castaldi, 1982, 1969; Caudill, 1959, 1952, 1950; Earthman, 1986), the environmental influence of design on attitudes and behavior (Cohen, 1976; Gump, 1967; Hereford, et al, 1963; Kritchevsky, et al, 1967; Moos, 1973; Perley & martin, 1978), and the roles necessary for implementing a design decision process (Davis, 1973; Duckworth, 1972; Groves, 1985). The study was limited to architects participating in school facility construction, public school superintendents and principals. In Illinois, public schools may not be constructed without use of a licensed

architect, and implementation of program is the identified responsibility of school superintendents and building principals. An underlying assumption of the investigation was that due to different professional orientations, these individuals hold differing views on the way facilities should interact with program, and that professional orientation, training, and experience directly affect decisions made, and these decisions affect how a program is implemented (Dibs, 1963; Duckworth, 1972; Stevenson, 1973).

Rationale

The study was structured to look broadly at the types of decisions made, and what effect appeared in the overall delivery system in an attempt to analyze on what basis participants made their decisions. A series of reasons were instrumental in the perspective chosen: a) prior work in design and educational settings highlighted the importance that design and education professionals understand each others orientation, b) that their purposes for planning and developing a concept are different and public accountability for school administrators require there be good communication between these different constituencies (Castaldi, 1982; Caudill, 1954; Papke, 1966), c) current trends in declining resources and revenues for public schools make it

mandatory for greater understandings which lead to greater cost efficiencies as school facilities are not inexpensive undertakings (Caudill, 1954), d) designers are better able to plan appropriate facilities when they understand the academic and educational professionals' orientation, and when educators have elucidated clear goals and objectives on what a proposed facilitiy is intended to do (Castaldi, 1982; Hoerner, 1964; Sumption & Landes, 1957), and e) updated information is needed in school facilities planning since existing databases have become outdated with the decline in facility construction (National, 1964). The emphasis on facility importance as a tool in the implementation of program has waned, and few field practicioners in Illinois today have the requisite background or training in construction process, terminology, capital program forecasting and financing. This knowledge is no longer required for certification as an administrator in Illinois, and a study of this type is needed to investigate if a lack of training affect the decisions being made.

Finally, we speak of the need for research in education. In administration we are particularly concerned that research conducted be relevant to practice. In facilities that relevance applies to the practice of design as well as to education. In essence, this study is an attempt at "interdisciplinary

bridging" between research and practice, and between design and administration professionals (Stokols, 1983). There is more than one reason behind the theory-practice perspective.

Research Question

The research is focused around one major and nine subsidiary research questions. The major question is:

> What are the major factors comprising an educational facilities plan, and how do professionals (architects, superintendents, and principals) rank those factors in importance?

Nine subsidiary questions were developed and results were organized around the responses obtained for these questions.

Conceptual Framework

The conceptual framework for the study is a combination of several which exist in the design and education literature. These paradigms look at design, behavioral, temporal, physical/organizational factors within spaces, and psychosocial factors of spaces (cultural factors such as background, attitudes) and is combined with items identified in the design literature for involving users in the design process (Cohen, 1976; Perley & Martin, 1975; Wandersman, 1979a, b). One underlying assumption is that it is valid to include users of spaces in the design of those spaces (Wandersman, 1979a, b). It

is intended to investigate how much input do users of school spaces have in the design or renovation of those spaces. Although, not a major focus of the investigation, it is an added benefit from the research efforts. A third piece of the framework deals with the coping process and how the stresses inherent in occupying certain physical configurations affect the attitudes and exhibited behaviors individuals have when functioning in particular settings. This piece derives from the literature on design-behavior interactions (Cohen, 1976).

Insert Figure 1 about here

The current investigation only looks at one piece of this combined paradigm. The top portion of the paradigm that looks at those items identified in the literature at the Mediators and Moderators of Participation (see Figure 2).

Insert Figure 2 about here

Individual needs and values, individual mastery of the

FIGURE 1

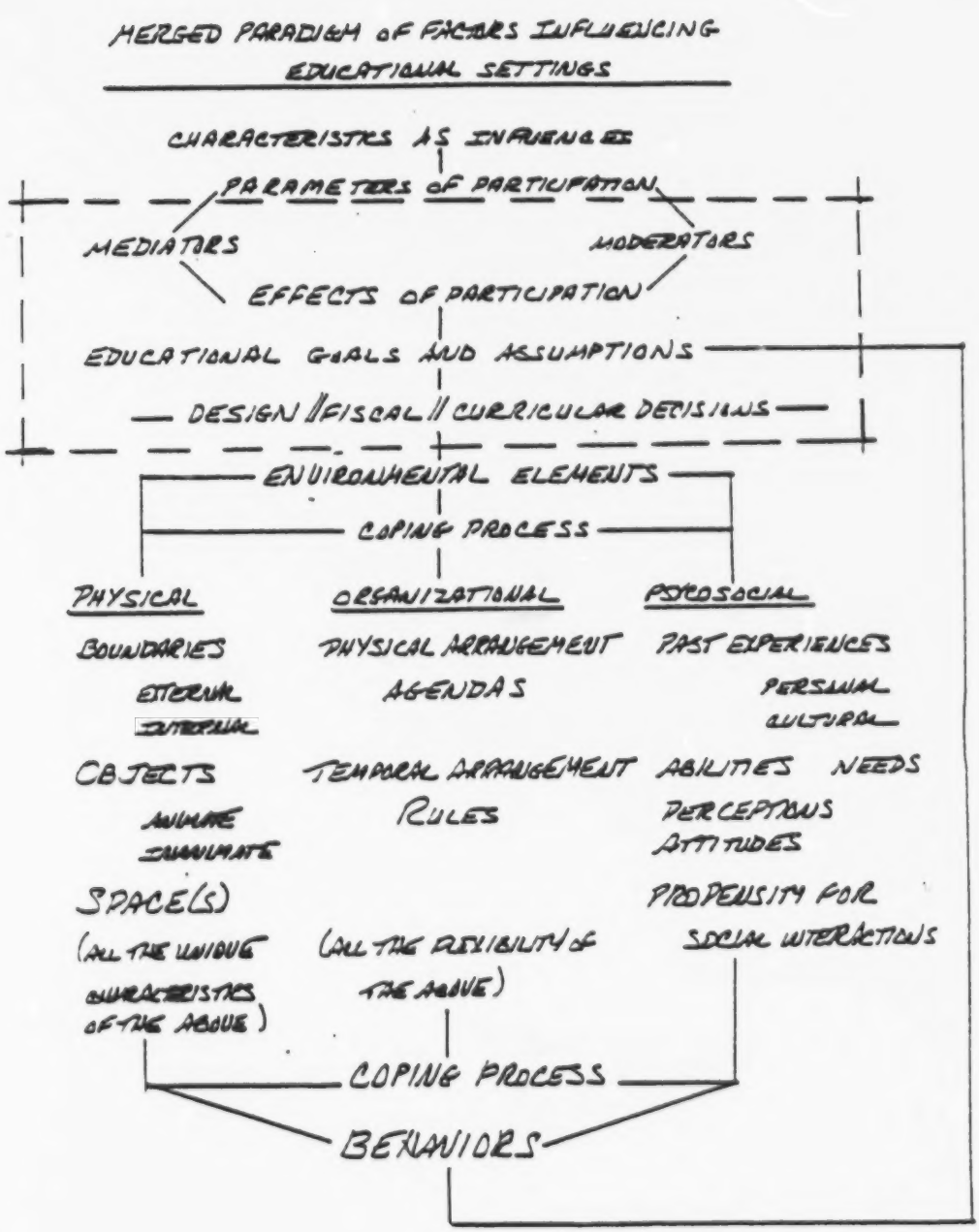
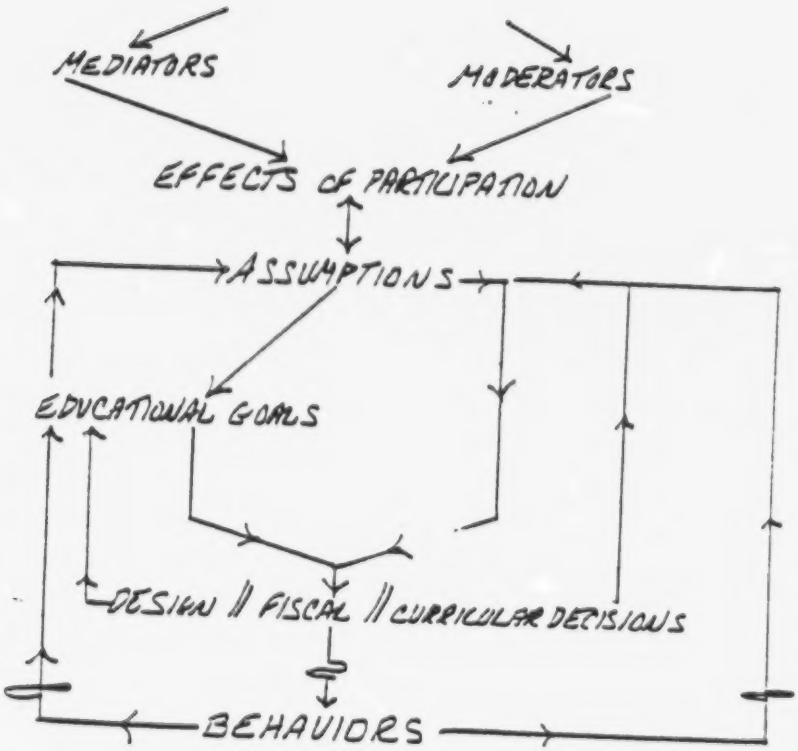

MERGED PARADIGM OF FACTORS INFLUENCING EDUCATIONAL SETTINGS
CHARACTERISTICS AS INFLUENCED
PARAMETERS OF PARTICIPATION
MEDIATORS
MODERATORS
EFFECTS OF PARTICIPATION
EDUCATIONAL GOALS AND ASSUMPTIONS
DESIGN // FISCAL // CURRICULAR DECISIONS
ENVIRONMENTAL ELEMENTS
COPING PROCESS
PHYSICAL
ORGANIZATIONAL
PSYCHOSOCIAL
BOUNDARIES
EXTERNAL
INTERNAL
PHYSICAL ARRANGEMENT
AGENDAS
PAST EXPERIENCES
PERSONAL
CULTURAL
OBJECTS
ANIMATE
INANIMATE
TEMPORAL ARRANGEMENT
RULES
ABILITIES
NEEDS
PERCEPTIONS
ATTITUDES
SPACE(S)
(ALL THE UNIQUE CHARACTERISTICS OF THE ABOVE)
(ALL THE FLEXIBILITY OF THE ABOVE)
PROPENSITY FOR SOCIAL INTERACTIONS
COPING PROCESS
BEHAVIORS

FIGURE 2



DIRECTIONALITY AND COMPLEXITY OF INTERACTIONS BETWEEN MEDIATORS/MODERATORS OF PARTICIPATION, EDUCATIONAL ASSUMPTIONS, GOALS, BEHAVIORS, AND DECISIONS.

environment, amount of effort needed to participate in a given project, the degree of ego envolvement individuals have, and what things moderate those decision factors - individual need differences, environmental preferences, demographic variables, and person-situation variables. These are items which are site specific and do they have any effect on the decisions which are made.

TABLE 1.

MEDIATORS AND MODERATORS OF PARTICIPATION

Mediators	Moderators
Individual needs/values to project	Personality variables
Individual mastery of the environment	Environmental preferences
Effort expended to participate	Demographic variables
Individual degree ego involvement	Person/situation variables

SOURCE: Wandersman, A. (1979). User-participation: A study of type of participation, effects, mediators and individual differences. Environment & Behavior, 11, 4, 465-482.

This study is not a traditional quantitative approach to the investigation of interactions between variables. Rather, it is one utilizing the techniques of ethnographic investigation. In ethnography we are not as much concerned with degrees of variation - whether or not one individual is one standard deviation more in favor of certain physical configurations than another - but instead to identify the traits and characteristics of the decisionmakers (Bogdan & Biklin, 1982; Goetz & leCompte, 1984; Miles, 1979; Miles & Huberman, 1984). The combined paradigm lends itself to this type of design and investigation, and allowed investigation of how individuals participating thought about space and made decisions about space. How did these individuals conceptualize space, make decisions about space, and how did they sequence and prioritize the events of the decisionmaking process?

POPULATION AND SAMPLE

Since fiscal concerns are one of the issues that constrain facility planning a population was chosen that was readily identifable. Illinois statutes do not require that every district constructing facilities receive approval from the state. Districts with sufficient resources who do not seek access to state funding assistance are not required to go

through an approval process (ISBE, 1986). It would, therefore, be difficult to impossible to identify all districts who are currently, or just recently completed, a school facility project. Also, within the last 3-5 years fiscal issues have become more prominent in the thinking of Illinois' educational practicioners. Although Illinois is not witnessing a school construction building boom, the increased numbers of students beginning to enter the system are placing greater demands on reduced numbers of available classrooms and buildings. In order to identify the population, then, a request was made of the Illinois Capital Development Board for all districts applying for capital program funds. The Illinois School Code provides for districts to apply for, and receive, funds from the Capital Development Board if they cannot finance the construction or renovation of a facility from local resources (ISBE, 1986). The request was made for all districts applying for, and receiving funds in the last five (5) fiscal years. Due to certain administrative constraints, the Capital Development Board was only able to furnish a list consisting of districts who have received funds during the last three fiscal years (FY 1984, 1985, 1986). The listing received included district names, specific buildings, type of project undertaken, as well as names of the architectural firms that designed and supervised the projects. This list provided the names of seventeen (17)

districts with a total of twenty-one (21) buildings and approximately 41 individuals. The reason for a discrepency in numbers match is due to one district, (City of Chicago), having five (5) separate projects during this time frame.

The sample of this population was determined by iterative selection so that the architect, superintendent, and principal of a selected district are included in the sample. This provides the necessary cross-checking of informant data and perceptions needed in qualitative investigations. The final sample included three districts in which all individuals expressed their willingness to participate in the in-depth interview portion of the study.

Prior to the institution of the field portion of the study a data instrument was sent to the entire population. This instrument, although similar to a standard questionnaire in form, is not designed with the same purpose. Its intent is to obtain a broad base of information on the population under investigation and permit its checking with those issues the literature identifies as important and salient to the school facility design decision process. It permits checking if the broad general perceptions of this process are in line, or variant from, what the literature states as critical to this process.

Data Analysis

The data instrument was analyzed utilizing Exploratory Data Analysis techniques (Hartwig & Dearing, 1979). This allowed the investigation of any trends or characteristics present that would be present within the obtained data. This analysis proved problematic in that it did not yield any data that was significant. This was in part due to the small number of respondants. Forty-one (41) data instruments were mailed with twenty-nine (29) individuals returning completed forms. Seven (7) others responded, but chose to not participate, as their districts were currently in litigation on the projects in question. With no substantial variation in the data instrument responses, no revision of the original interview schedule was made.

Data collection took place between January 1, and July 1, 1987. During that time frame nine (9) district-level personnel and three (3) individuals who were employed in offices of the State of Illinois were interviewed. It became evident early in the interview portion that individuals not identified within the literature would need to be included in the investigation. The information obtained from the data instrument did not lead to the knowledge that there were other significant individuals active within this process. Responses on the instrument were

answered in a straightforward manner and responses were not in conflict with the literature. However, as the interviews progressed it became obvious that other individuals would need to be contacted and information solicited, particularly those employed at either the Capital Development Board and the State Board of Education offices.

Although interview responses were analyzed on an on-going basis, rather than working with each individually, analysis was undertaken when all three individuals at a particular district site had been completed. It can be argued that each interview should be treated separately. However, rather than revise the interview schedule early on, it was decided to complete a series with all the informants at a particular site, in order to control the amount of interviewer filtering bias and to gain a well-grounded knowledge of the culture of events within a single site (Hyman, 1954; Goetz & LeCompte, 1984; Pelto & Pelto, 1978).

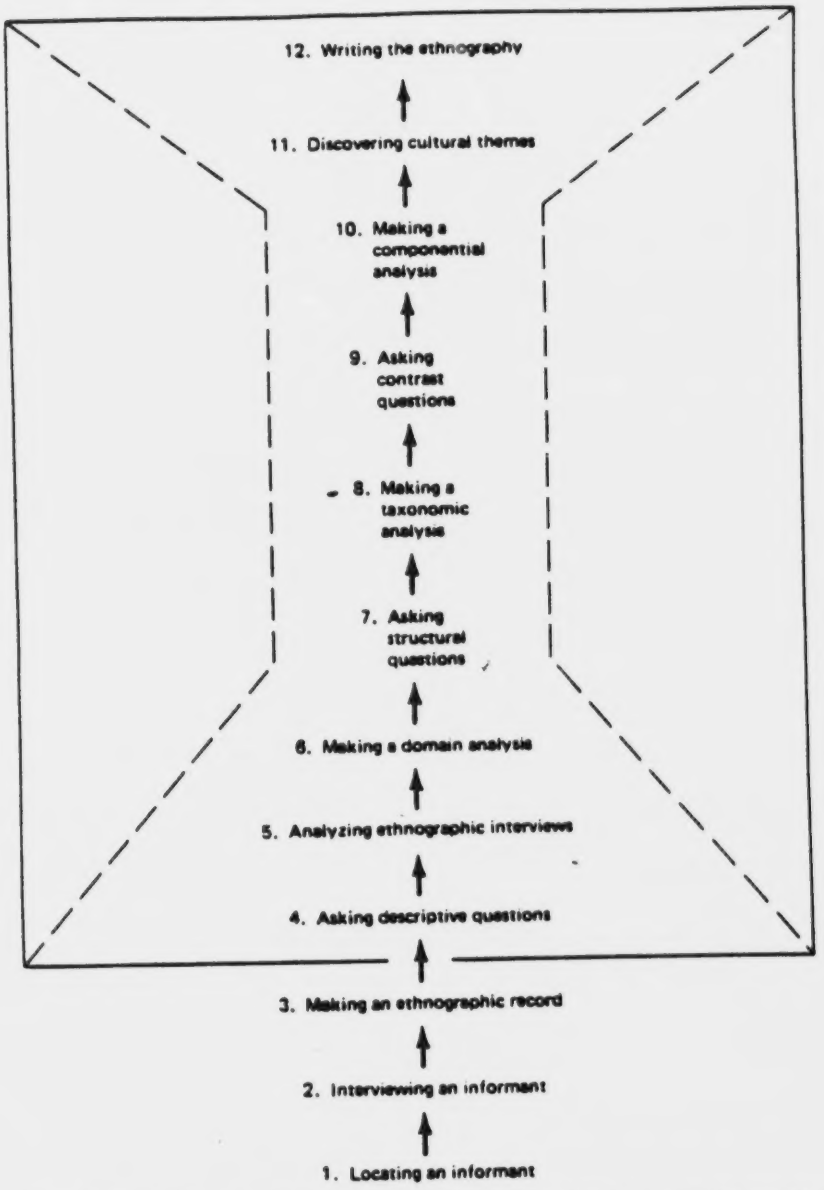
Informant interviews were analyzed using a formalized system of content analysis. (see Figure 3.)

Insert Figure 3 about here

This technique employed a very structured way of identifying cultural domains. Specific types and kinds of questions are asked to seek out the traits, trends, and characteristics existing within the informant data responses (see Figure 4.)

FIGURE 2.

THE DEVELOPMENTAL RESEARCH SEQUENCE


12. Writing the ethnography
11. Discovering cultural themes
10. Making a componential analysis
9. Asking contrast questions
8. Making a taxonomic analysis
7. Asking structural questions
6. Making a domain analysis
5. Analyzing ethnographic interviews
4. Asking descriptive questions
3. Making an ethnographic record
2. Interviewing an informant
1. Locating an informant

The D.R.S. steps begin with a wide focus, then with Step 7 begin to narrow for intensive investigation of a few selected domains. The dotted lines inside the box represent this change in focus; they suggest that both a narrow and wide focus occur simultaneously, but with more emphasis on one or the other at various stages of research.

Insert Figures 4 & 5 about here

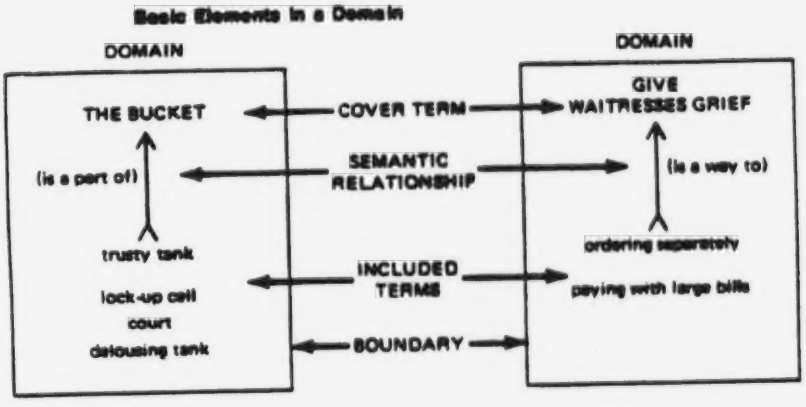
The intent was to identify what informants used as "folk terminology" to describe the events and situations under investigation rather than what the literature identified as terminology (Spradley, 1979, 1980). This process was continued for all informants, including those added from the Capital Development Board and the State Board of Education. It was hoped the data obtained would lead to the construction of an introduction taxonomy of educational facility decisionmaking.

Each of the interviews required at least four (4) rounds of analysis. There was a first-round cut at the completion of a single site's interviews. At the completion of all interviews at all sites, a second round of analysis was conducted to look for additional folk terminology. The third round was a "collapsing" round where larger, more encompassing terms were sought which incorporate those folk terms gleaned from analysis rounds #1 and #2, that spoke of the underlying culture within these sites. The fourth round was again a "collapsing" round which looked for even larger, and more encompassing domains which could serve as cultural idiomatic domains for these sites (see Figure 6 for examples of semantic relationships, form of the relationship, included terms, and domains).

FIGURE 4.

DOMAIN	SEMANTIC RELATION	STRUCTURAL QUESTION
Kinds of presentations	X is a kind of Y	Are there different kinds of presentations?
Kinds of training classes	X is a kind of Y	What are all the different kinds of training classes?
Kinds of Welcome Colliers signs	X is a kind of Y	What are all the kinds of Welcome Colliers signs?
Parts of an area	X is a part of Y	What are all the parts of an area?
Parts of a presentation	X is a part of Y	What are all the parts of a presentation?
Parts of a contract	X is a part of Y	What are all the parts of a contract?
Results of missing the wife	X is a result of Y	What are all the results of missing the wife?
Results of getting enthused	X is a result of Y	What are all the results of getting enthused?
Results of getting negative	X is a result of Y	What are all the results of getting negative?
Reasons for getting negative	X is a reason for Y	What are all the reasons for getting negative?
Reasons for summer contest	X is a reason for Y	What are all the reasons for the summer contest?
Reasons for keeping a door record	X is a reason for Y	What are all the reasons for keeping a door record?
Reasons for cherry picking	X is a reason for Y	What are all the reasons for cherry picking?
Places to find hidden clues	X is a place to Y	What are all the places to find hidden clues?
Places to get a triple	X is a place to Y	What are all the places to get a triple?
Places for pickup points	X is a place for Y	What are all the places for pickup points?
Uses for briefcases	X is a use for Y	What are all the uses for briefcases?
Uses for broadsides	X is a use for Y	What are all the uses for broadsides?
Ways to get enthused	X is a way to Y	What are all the ways to get enthused?
Ways to give a qualifier	X is a way to Y	What are all the ways to give a qualifier?
Ways to do a close	X is a way to Y	What are all the ways to do a close?
Ways to knock	X is a way to Y	What are all the ways to knock?
Stages in retraining	X is a stage in Y	What are all the stages in retraining?
Stages in closing a deal	X is a stage in Y	What are all the stages in closing a deal?
Stages in a year	X is a stage in Y	What are all the stages in a year?
Stages in selling books	X is a stage in Y	What are all the stages in selling books?

FIGURE 5.


Basic Elements in a Domain
DOMAIN
DOMAIN
THE BUCKET
COVER TERM
GIVE
WAITRESSES GRIEF
(is a part of)
SEMANTIC
RELATIONSHIP
(is a way to)
trusty tank
lock-up cell
court
delousing tank
INCLUDED
TERMS
ordering separately
paying with large bills
BOUNDARY

Insert Figure 6 about here

Six cultural domains were readily identified by this process of analysis. They are:

Financing the Project
Integrating Program and Design
Delaying the Project
Planning the Project
Articulating Needs
Not Planning the Project

The surprise was in the discovery of a seventh domain. The first six domains were not surprising, in and of themselves, as they are in line with issues in the literature. The seventh, known as "Playing By the Rules Means Not Playing By The Rules", did not appear anywhere in the data instrument responses, nor was it evidentced by the review of literature. It was also not a domain specifically articulated by individual informants. It did become clear, however, this is the underlying premise on which informants based their decisions.

Informants related information on what they were required to do, and with whom they interacted, as well as frustration with the operation of the existing, formalized system. Over and over informants repeated "there's a system in place but we don't do that" or "this is what you're suppossed to do but we don't

Figure 6.

The six cultural domains identified by the content analysis were:

Financing the Project
Integrating Program and Design
Delaying the Project
Planning the Project
Articulating Needs
Not Planning the Project

The following are selected samples of actual semantic relationships, form of relationships, included terms, & domains:

Semantic relationship : Means - End
Form : X is a way to Y
Domain : X is a way to Get Money
Included Terms : pass a referenda, plan facilities, get money, understand how CDB calculates costs, determine money sources.

Semantic relationship : Rationale
Form : X is a reason for Y
Domain : X is a reason for Planning
Included Terms : doing school design, needing space, condemning buildings, increasing population.

An example of two coverterm relationships collapsed into a larger, more inclusive category:

Form : Strict Inclusion
Relationship #1 : X is a kind of Y
Domain : Bureaucracy

Form : Cause - Effect
Relationship #2 : X is a result of Y
Domain : CDB Regulations

New Cover Domain : Going Around the System
New Form : X is a way to Y
Semantic relationship : Means - End

These techniques were also applied to trace and archival materials, as well as researcher notes/observations taken during informant interviews.

follow that, this is what we did". This leads, then, to answers for the global major, and nine subsidiary research questions.

Findings and Conclusions

The major research question of this study is

> What are the key decision factors which comprise an educational facilities plan, and how do decision makers (administrators and design professionals) rank those factors in importance?

In the case of the three districts included in this study there is only a single key decision factor - this is the multiple strategies necessary for obtaining the needed facility. In order to accomoplish this task the superintendents who served as this study's informants, knew their local constituencies very well. Each district had a history of referenda defeat, and these administrators recognized passage of a referenda was critical to acquiring the funds sufficient to finance their capital program.

They recognized as well, that acquiring state funds was necessary to make a referenda palatable to their local school board, and acceptable to local voters. To enable this further, they made sure building principal's were convinced of the need for a facility, and selected architects whose proven track records within these districts were time-honored and successful.

These superintendents used their tenured relationships with state legislatators to circumvent the state's funding procedures by learning not only the explicit rules, but also the tacit assumptive world, operative within Illinois' educational policymaking circles (Marshall, et al, 1986). It stands to reason if state dollars could not be procured, they could in clear conscience tell local constituencies every avenue within their power had been explored to seek outside relief from an increased local tax burden. At the very least, they could show the state's recognition of their needs through a willingness to defray at least a part of the capital costs. This would predispose local voters toward meeting part of the cost through a tax on local property.

Informants statements highlighted that while spending more is desirable, it may not be realistic. The literature documents the necessity of starting earlier and using long range plans as a vehicle for implementing that process (Adinolfi, in Strevell, 1972). This study's districts each used some type of long range plan in determining the adequacy of their current versus long term facility needs. Their knowledge and expertise in use of an assumptive world of educational policymakers is an edge in their struggle for influence, in order to better anticipate and provide adequate facilities for their districts', programs', and individual students' needs.

The major findings of this study are:

1. For the districts included in this study the most important decisions in school facility planning and design are those while revolve around obtaining the facility by whatever means are available. The completion of the facility is more important than the decisions about the means for obtaining it.

2. The major actors in the decisionmaking process in school facility planning and design, for Illinois districts accessing state capital program dollars, are superintendents, architects, state agency personnel, and the state legislature.

3. Architects are chosen for school facility projects on the basis of long standing and well-established relationships for the districts included in this study.

4. Articulation between educational goals, objectives, needs, and facility designs is more concern for architects than for superintendents or principals for this study's districts. Superintendents and principals seem to feel their options are highly constrained in this area, possible due to limited resources and state bureaucratic structures.

5. State funding mechanisms and the politics of state education facility financing are major factors in the decision makaing process for these districts whose local resources were insufficient in meeting facility needs.

6. Political strategies seem most appropriate for securing new school facilities in districts accessing capital program funding from Illinois' state resources.

One of this studys' limitation was inclusion of only those elementary and secondary districts receiving state dollars for the financing of capital programs. It may be these districts differ characteristically from those whose local resources are sufficient to meet their facility needs. In that case, the possibility exists for this study's original theoretical framework to appropriately explain decision factors

related to facility decisionmaking and to the implementation of educational programs.

The highly limited sample size and the nature of its selection also limit the study's findings to only the participating individuals and districts. However, the study is grounded in the philosophy and techniques of ethnographic investigation and analysis. The findings and results clearly indicate the highly appropriate nature, and effectiveness, of these techniques in uncovering and documenting heretofore unknown participants, issues, processes, and events. The method and procedures chosen for investigation of issues of capital program decisions provides new information and insights into the context and processes surrounding policies and activities for acquiring state capital program dollars. The continued use of these techniques in future studies related to policy, educational administration, or design issues will assist in a greater depth of understanding on the entire process, through the understanding of the individual components.

Assumptive Worlds & Policymakers

The findings of this study surfaced the political nature of school facility funding and the effect of funding mechanisms in the process, and were somewhat troublesome given the

conceptual framwork chosen for the investigation. The study's framework concentrated on organizational, temporal, and behavior factors as determinants of desired educational outcomes. This framwrok does not include the integration of economic and political factors, nor the central role of fiscal resources in school facility planning and design. Both Glaser & Strauss (1967) and Goetz and LeCompte (1984) stress that the theoretical framework of an ethnographic research design may be adjusted as the research proceeds in efforts to achieve greater explanatory power. This occurs as a researcher gains deeper understandings of the culture under investigation.

A number of studies have documented the highly political nature of educational policymaking and resource allocation in public school in Illinois (Burlingame, 1980; Marshall, Mitchell, & Wirt, 1986; Ward, 1986, in press). Burlingame, in particular, stresses the need for simple descriptive case studies of external environmental actors and internal interests as a method to understand educational politics. Both Ward studies adopt such an approach in explaining events in statewide educational politics in the mid-1980s in Illinois, and find that both local control and concensus politics are powerful forces in this process. This study confirms Ward's finding for educational facility decisions. Marshall, et al (1986) studied state education policymaking in six state including Illinois. They

found policymakers within these states have distinctive assumptive worlds, which they define as a "shared sense of what is appropriate in action, interaction and choice" (p. 366). The elements of these assumptive worlds relate to "expected behaviors, rituals, and judgments about feasible policy options" (p. 366). The relevance of this discussion on assumptive worlds of policymaking is reflected in the following statement:

> Any valid picture, map, model, theory, or practice of education policymaking must incorporate assumptive worlds...They derive from the history, values, and role obligations of key actors, the political culture, the formal structure of power and responsibility, the partisan politics, and the informal processes of the policy world. Assumptive worlds bind together these other elements in policymaking. They are revealed by policymakers whose words and stories incorporate all elements affecting policymaking, from personal propensities of key actors to enduring cultural factors in their states (Marshall, et al., 1986, pp 376-377).

These findings, revealed through the words and stories of local and state policy amkers, detail an assumptive world of policymaking in Illinois that pervades the decision making process for educational facilities in districts utilizing state capital program dollars.

It should not be surprising that funding issues emerged as paramount in importance, primarily for superintendents, but secondarily for achitects. A six state study by Mitchell, Marshall, and Wirt (1985) found of the seven major policy mechanisms, school finance dominates policymaking while building

and facility policy ranks last. The state political culture, informal processes, partisan politics, state fiscal environment, and history and tradition seem to be more powerful determinants of facility design and planning decisions than organizational, temporal, or behavior factors. The assumptive worlds of Illinois education education policy is a more powerful conceptual framework for explaining the events, actors, and actions related to role coflict and provision of adequate educational facilities for the three districts of this study. These school site actors violate explicit rules appropriate for acquisition of funds and facilities in favor of a set of tacit rules deeply embedded in the policymaking culture of the state.

What has emerged in this study is a portrait of a process dominated by fiscal and poltical factors rather than organizational, temporal, and behavioral factors for the participating districts. The planning and design of school facilities in this investigation take place in a highly politicized arena where financial resources are very limited and fiscal decisions are paramount.

Summary & Conclusions

This was an exploratory study. Its intent was to explore the existance of the initial assumptions within the chosen

population, and verify the usefulness of a theoretical framework for the explanation of decisions and activities within the identified population.

During the study's conduct it became clear the initial assumptions did not apply to the school site informants, and a theoretical framework of greater explantory power was required for explaining the informants' actions and decision activities, as identified by the data analysis activities. As a consequence, refinement of the initial assumptions, combined with additional field study, is needed to validate the current findings and search for additional cultural descriptors of educational facility decision making.

Although it is possible to construct a taxonomy of domains identified in this study, their applicability, even to this study's population, are suspect. One reason is the realization the original seven potential seven domains, are subsumed under the more encompassing domain of 'Playing By the Rules Means Not Playing By the Rules'. It is not unreasonable to conclude still other, additional, cultural domains exist and are yet to be discovered within this population.

What is known as a result of this study is the presence of a single domain, containing six sub-strategies, each of which has its own inclusive folk terminology. A taxonomy would also be suspect at this time due to the limited number of population members queried. As the results show, mixed feelings exist on several of the issues between site and data instrument respondants. In addition to which, ethnography depends on the

inclusion of negative case analysis, which this study neither identified, nor investigated (Goetz & LeCompte, 1984; Miles & Huberman, 1984). It is, therefore, far too early in the research process to begin developing a taxonomy on facility decision makig.

The results and findings in this investigation did not disprove or invalidate the existance or importance of program issues relative to facilities. It did, however, expose the preeminent position of fiscal and political issues over programmatic ones for the three informant school districts. The original framework may be fundamentally useful if augmented to integrate the assumptive aspects inherent in the Marshall, Mitchell,and Wirt (1986) investigations. This could lead to a clearer understanding of the forces at work in the relationships between state policymakers and local Illinois school districts whose fiscal situations require reliance on acquiring and using state capital program dollars.

Summary

This study investigated one issue, decision making in the planning and construction of public educational facilities. In order to accomplish this an ethnographic study was formulated to uncover and detail a rich, deep, introductory, database on individuals making these decisions, and their perceptions of

factors critical within the process.

A general background on the need for this type of study was introduced in order to provide an understanding of the dynamics at work in educational settings relative to program implementation and physical facilities. The literature on decision making and facility planning was reviewed. It documents the roles of architects, school administrators, planners and designed environments in the formation of individual and group behaviors.

The study's design and theoretical framework provided specifics on the methodology, the population and study sample, and describe the instrumentation used in the data collection and analysis activities. The data analysis and findings are discussed and reviews the applicability of the selected framework. It points toward the need for a framework of greater explanatory power, relative to the population and sample, as well as to the results and findings. A framework which better explicates the results (Marshall, Mitchell, & Wirt, 1986) was identified as being more closely aligned with the information gained as a result of the investigation on decision activities in districts using Illinois state dollars for facilities. The study also demonstrates the appropriateness of the chosen design, method, and analysis for uncovering heretofore unknown perceptions, events, and contexts surrounding school facility

decisions. Finally this study was a beginning effort at integrating policy issues within education finance, administration, and architecture. It provides many more questions that it answers. Its goals included the exploration and generation of potential issues. In that it is successful. It opens a window of opportunity for researchers of both architecture and education to cooperatively work toward improved training programs. It is also geared toward better administrative and design practice by providing information on design decision making. Finally, it suggests an opportunity to consider and revise state education policies for financing, planning, and providing adequate facilities for Illinois' public elementary and secondary schools.

Lastly, this study is one additional link between the construction of theory and the realities of practice (Stokols, 1977, 1983) in education and architecture, particularly as it affects the planning, financing, and building of public school facilities in Illinois.

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APPENDIX.

Name of person completing form: _____
Title: _____
District/Firm: _____

SELECTED BETWEEN 1-1-87 AND 7-1-87.

QUESTIONNAIRE

A STUDY OF FACILITY ADEQUACY:

DIRECTIONS: Please give appropriate answers to the following statements. Your responses will provide general information about all study participants. Do not skip any questions. Choose the answer which MOST ACCURATELY reflects your feelings or perceptions on the issue. There are no "Right" or "Wrong" answers to these questions.

Your estimated response time is approximately 30 minutes.

Thank you for your interest and participation in this study.

1. POSITION: (Check only ONE, please)
   a. 1 Superintendent (19) 31.0%
   b. 2 Architect (13) 44.8%
   c. 3 Principal (7) 24.1%
   TOTAL: 29

2. SEX: a. Female (4) 13.8% b. Male (25) 86.2%

3. EDUCATION: (Check HIGHEST degree attained)
   a. 1 Bachelor (11) 37.9% c. 3 A.C./C.A.S. (2) 6.9%
   b. 2 Master's (10) 34.5% d. 4 Ed.D./Ph.D. (5) 17.2%
   ∅ NO RESPONSE (1) 3.4%

ALL RESPONDENTS
MEDIAN AGE: 47.0
LOW: 32
HIGH: 64
MEAN AGE: 47.0

4. DATE OF BIRTH: ___/___/___

5. No. of years in teaching (superintendents/principals only) N = 16 MEDIAN 10.0 MEAN 16.2 RANGE 5.5 - 30.5

ARCHITECTS
MEAN AGE: 47.7
MEAN EXPERIENCE: 22.9

6. No. of years in administration (superintendents/principals) N = 16 15.5 MEDIAN MEAN: 16.5 RANGE 8.0 - 28.0

7. No. years in architecture (architects only) N = 13 24.0 MEDIAN RANGE 9.0 - 39.0 MEAN: 22.9

SUPERINTENDENTS
MEAN AGE: 41.3
MEAN EXPERIENCE: 19.2

8. Did your professional training include a SPECIFIC course in school plant planning?
   a. YES (11) 37.9% b. NO (13) 62.1%

PRINCIPALS
MEAN AGE 38.8
MEAN EXPERIENCE: 14.1

9. Do you feel your academic training prepared you adequately for planning and designing school facilities?
   a. YES (12) 41.4% b. NO (16) 55.2% NO RESPONSE 1 3.4%

10. Do you feel certification/licensure requirements should specifically include a school facility planning course? (Make a check mark for EACH of the groups listed below).

NO RESPONSE						
(9) 31.0%	a. SUPERINTENDENTS	1. YES	(14) 48.3%	2. NO	(6) 20.7%
(6) 20.7%	b. ARCHITECTS	1. YES	(13) 44.8%	2. NO	(10) 34.5%
(11) 37.9%	c. PRINCIPALS	1. YES	(11) 37.9%	2. NO	(7) 24.1%

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Within the last five years your district/firm has completed a public school design project. Please respond to the following questions based on your experiences in this MOST RECENTLY COMPLETED project.

11. With whom do you feel the initiative for beginning this project originated? (Check only ONE, please).

0 NO RESPONSE	11	37.9%			
a. 1 BOARD OF EDUCATION	0		e. 5 INDIVIDUAL BOARD MEMBER	0	
b. 2 SUPERINTENDENT	13	44.8%	f. 6 BUSINESS MANAGER	0	
c. 3 PRINCIPAL	1	3.4%	g. 7 A, B, and C	2	6.9%
d. 4 ARCHITECT	0		h. 8 B, C, and D	1	3.4%
			9 UNUSABLE	1	3.4%

12. Which person do you feel had the greatest day-to-day responsibility for managing the planning of this new or remodeled facility? (Check only ONE, please)

0 NO RESPONSE	1	3.4%			
a. 1 BOARD OF EDUCATION	2	6.9%	e. 5 INDIVIDUAL BOARD MEMBER	0	
b. 2 SUPERINTENDENT	11	37.9%	f. 6 EDUCATION CONSULTANT	0	
c. 3 PRINCIPAL	1	3.4%	g. 7 FACILITY CONSULTANT	0	
d. 4 ARCHITECT	13	44.8%	h. 8 BUSINESS MANAGER	1	3.4%

13. Describe the DEGREE of planning involvement the following individuals or groups held in this most recently completed project.

KEY = PI - Primary involvement
SI - Secondary involvement
MI - Minor involvement
NI - NO involvement

(Circle only ONE response for each person or group listed, please).

	PI	SI	MI	NI	No Response
a. SUPERINTENDENT	1 (12) 27.6%	2 (3) 10.3%	3 (1) 3.4%	4 (4) 13.8%	
b. ASSIST. SUPERINTENDENT	1 (1) 3.4	2 (5) 17.2	3 (4) 13.8	4 (13) 44.8	(6) 20.7%
c. BUSINESS MANAGER	1 -0-	2 (3) 10.3	3 (2) 6.9	4 (15) 51.7	(7) 24.1
d. BUILDING PRINCIPAL	1 (10) 34.5	2 (6) 20.7	3 (1) 3.4	4 (11) 37.9	(1) 3.4
e. BOARD OF EDUCATION	1 (3) 10.3	2 (3) 10.3	3 (3) 10.3	4 (16) 55.2	(4) 13.8
f. CURRICULUM SPECIALIST	1 -0-	2 (3) 10.3	3 (6) 20.7	4 (11) 37.9	(9) 31.0
g. TEACHER(s)	1 (4) 13.8	2 (8) 27.6	3 (3) 10.3	4 (6) 20.7	(8) 27.6
h. GRADE/DEPT. HEADS	1 -0-	2 (4) 13.8	3 (3) 10.3	4 (15) 51.7	(7) 24.1
i. CITIZEN ADVISORY PANEL	1 (1) 3.4	2 (5) 17.2	3 (7) 24.1	4 (13) 44.8	(3) 10.3
j. PTA	1 (1) 3.4	2 (5) 17.2	3 (7) 24.1	4 (15) 51.7	(1) 3.4
k. ARCHITECT	1 (29) 100	2 -0-	3 -0-	4 -0-	
l. PROFESSIONAL ENGINEER	1 (14) 48.3	2 (6) 20.7	3 (3) 10.3	4 (3) 10.3	(3) 10.3
m. HEAD CUSTODIAN	1 (2) 6.9	2 (10) 34.5	3 (3) 10.3	4 (7) 24.1	
n. NURSE	1 -0-	2 (3) 10.3	3 (2) 6.9	4 (19) 65.5	(5) 17.2
o. OFFICE/CLERICAL	1 -0-	2 (4) 13.8	3 (3) 10.3	4 (19) 65.5	(3) 10.3
p. STUDENTS	1 -0-	2 (2) 6.9	3 (4) 13.8	4 (19) 65.5	(2) 6.9
q. CAPITAL DEVELOPMENT BOARD	1 (17) 58.6	2 (7) 24.1	3 (2) 6.9	4 (2) 6.9	(1) 3.4
r. STATE BOARD CONSULTANTS	1 -0-	2 (3) 10.3	3 (2) 6.9	4 (21) 72.4	(3) 10.3
s. EDUCATION CONSULTANTS	1 (2) 6.9	2 (3) 10.3	3 (2) 6.9	4 (18) 62.1	(3) 10.3
t. FACILITY CONSULTANTS	1 (1) 3.4	2 (2) 6.9	3 (3) 10.3	4 (20) 69.0	(3) 10.3
u. COLLEGE/UNIVERSITY STAFF	1 (2) 6.9	2 (1) 3.4	3 (3) 10.3	4 (21) 72.4	(5) 17.2
v. CITY/TOWN COUNCIL	1 (1) 3.4	2 (1) 3.4	3 (2) 6.9	4 (21) 72.4	(1) 3.4
w. CIVIC ASSOCIATIONS	1 (2) 6.9	2 (1) 3.4	3 (3) 10.3	4 (23) 79.3	(2) 6.9
x. SOCIAL SERVICE AGENCIES	1 -0-	2 (2) 6.9	3 (3) 10.3	4 (23) 79.3	(3) 10.3
y. OTHER (SPECIFY)_____	1 (1) 3.4	2 (1) 3.4	3 (2) 6.9	4 (19) 65.5	

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14. Districts and Architectural firms use different approaches to educational planning, and some use a combination of different approaches. Please CIRCLE the approach(es) you feel most closely resembles the one used in your most recently completed school facility project: (Please circle one answer for EACH approach)

KEY = P - PRIMARY Use
S - SECONDARY Use
M - Minor Use

APPROACH A - The Conceptual Approach P S M NO RESPONSE
(4) 13.8% (11) 37.9% (13) 44.8% (1) 3.4%

The conceptual approach emphasized broad educational goals, and the planning group tries to prepare for future needs through consideration of these broader goals. Examples of broader goals might be - individual differences, self-instruction, gradual change, staff utilization, multi-structured scheduling and grouping for large and small numbers.

APPROACH B - The Functional Approach P S M
(17) 58.6% (7) 24.1% (5) 17.2%

The functional approach considers the uses that will be made of the building in terms of program and community use. Examples of the functional approach might be to design a building for team teaching, self-contained classrooms, school-within-a-school, ungraded school, or departmentalization.

APPROACH C - The Specific Approach P S M
(13) 44.8% (11) 37.9% (5) 17.2%

The specific approach considers each part of the building separately, such as: Science, Physical Education, Music, Art, History, Mathematics, and Cafeteria, and develops areas which seem ideally suited for these instructional purposes.

Various cost/design options are considered at different levels of appropriateness to program needs. In your most recently completed project, WHO in the following list do you feel made the MAJOR choices recommended to the Board of Education?

15. Who had the PRIMARY responsibility for making decisions related to Cost in your last project? (Check only ONE, please).

a. 1 BOARD OF EDUCATION	13	44.8%
b. 2 SUPERINTENDENT	8	27.6%
c. 3 CITIZEN/EDUCATOR COMMITTEE		
d. 4 BUSINESS MANAGER		
e. 5 PRINCIPAL		
f. 6 ARCHITECT	7	24.1%
g. 7 OTHER (SPECIFY)_____	1	3.4%
8 NO RESPONSE	2	

16. On reviewing this completed project, who do you think SHOULD make these decisions? (Check only ONE, please).

a./ BOARD OF EDUCATION	14	48.3%	
b.2 SUPERINTENDENT	10	34.5%	
c.3 CITIZEN/EDUCATOR COMMITTEE	2	6.9%	
d.4 BUSINESS MANAGER			
e.5 PRINCIPAL			
f.6 ARCHITECT	3	10.3%	
g.7 OTHER (SPECIFY)_____			
Ø NO RESPONSE	Ø		

17. Describe the SOURCES OF FUNDING for your most recently completed project. (Please RANK ALL the items listed. #1 is the PRIMARY source of funds, #2 the secondary source, #3 the tertiary source, etc).

NUMBERS & PERCENTAGES SHOWN ARE FOR #1 RANKING AND NO RESPONSE ONLY. N=29

	No Response			No Response	
a. SPECIAL LOCAL TAX	(16) 55.2%	5	17.2%	e. LIFE-SAFETY (30) 69.3	(4) 10.3
b. EDUCATION FUND	(21) 72.4%	2	6.9%	f. DO NOT KNOW (25) 86.2	(1) 3.4
c. BUILDING/MAINTENANCE FUND	(15) 51.7%	Ø	—	g. SPECIAL Legislative appropriation (17) 58.6	(2) 6.9
d. CAPITAL DEVELOPMENT BOARD	(7) 24.1%	15	51.7%	h. PRIVATE donation or gift (27) 93.2%	Ø

The following statements describe ways in which pupils may be distributed within school buildings. Please recognize that some portions of any building (e.g., Gym or Lunchroom) may be used by all students. Check the statement WHICH MOST CLOSELY RESEMBLES the use of your most recently completed school building project.

18. (15, 51.7%) ( )/a. "Grade Level Distribution" - Pupils are grouped on separate floors, in separate wings, or in separate "little schools" according to grade levels (each grade has its own floor, wing, or "little school").

(4) 13.8% ( )2b. "School-within-a-school" - Pupils in groups from all grade levels (e.g., 100 from each of grades 10, 11, 12) are housed on separate floors, in separate wings, or separate "mini schools" for a substantial portion of the total school day.

(7) 24.1% ( )3c. "Subject Area Distribution" - Each floor, wing, or "mini school" houses a different subject area or combination of subject areas. Pupils move from area to area throughout the building (e.g., first floor - Math, second floor, Science, etc).

(3) 10.3% ( )4d. OTHER (Please briefly describe):

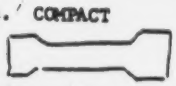
Ø Ø No Response

19. Was the facility originally planned to house the type of program described and identified in question #18 above?

a./ YES (28) 96.6% b.2 NO (1) 3.4%

20. Which of the following school building types MOST CLOSELY resembles the type of facility from your last completed project, and in which the above program is housed? (Circle only ONE, please).

a./ COMPACT

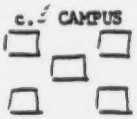


c. 51.7%

b.2 TRANSITIONAL

c. 51.7%

c.3 CAMPUS



c. 3.4%

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21. In your opinion, does this building meet the educational programs needs? (Check only ONE, please).

a. 5 Very adequate for program needs	(20)	69.0 %
b. 4 Adequate for program needs	(9)	31.0 %
c. 3 Neither adequate nor inadequate	—	
d. 2 Inadequate for program needs	—	
e. 1 Very inadequate for program needs	—	

22. In your opinion, how adequately do you feel this building will be for FUTURE educational program needs? (Check only ONE, please).

a. 5 Very adequate for program needs	(17)	58.6 %
b. 4 Adequate for future needs	(11)	37.9 %
c. 3 Neither adequate nor inadequate	—	
d. 2 Inadequate for future needs	(1)	3.4 %
e. 1 Very inadequate for future needs	—	

23. I WOULD NOW LIKE YOU TO THINK OF YOUR LAST AND MOST RECENTLY COMPLETED SCHOOL FACILITY PROJECT AS A WHOLE.

DESCRIBE your FEELINGS about the AESTHETIC QUALITIES of the building. Check (X) the ONE word in each of the following pairs of items which BEST describes this building. Please do not leave out any of the choices.

	2		1	
1.	(1) 3.4%	uninviting/welcoming	(28) 96.6%	NO RESPONSE
2.	16, 55.2%	adult like/youthful	13 44.8	
3.	(26, 89.7%	comfortable/uncomfortable	(3, 10.3	
4.	(20, 69.0%	interesting/uninteresting	(9, 31.0	
5.	(1) 3.4%	unfriendly/friendly	(28) 96.6%	
6.	(6, 20.7%	factory like/home like	(23) 79.3%	
7.	—	weak/strong	(29) 100%	
8.	(29) 100%	good/bad	—	
9.	(2, 6.9%	dim/bright	(27) 93.1%	
10.	(27) 93.1%	colorful/drab	(2) 6.9%	
11.	—	dirty/clean	(29) 100%	
12.	(13) 44.8%	indistinguishable/different	(16) 55.2%	
13.	(24) 82.8%	artistic/monotonous	(5) 17.2%	
14.	(8, 27.6%	passive/active	(21) 72.4%	
15.	(18) 62.1%	soft/hard	(11) 37.9%	
16.	(1) 3.4%	tiring/restful	(28) 96.6%	
17.	(25) 86.2%	convenient/inconvenient	(4) 13.8%	
18.	(20) 69.0%	institutional/residential	(9) 31.0%	
19.	(26) 89.7%	considerate/indifferent	(3) 10.3%	
20.	(1) 3.4%	inefficient/efficient	(27) 93.1%	— — — (1) 3.4%
21.	(24) 82.8%	cozy/sterile	(5) 17.2%	
22.	—	antiquated/modern	(29) 100%	
23.	(22) 75.9%	expensive/cheap	(7) 24.1%	

THANK YOU !

YOU HAVE NOW COMPLETED THE QUESTIONNAIRE PORTION OF THIS STUDY. PLEASE RETURN IT AS SOON AS POSSIBLE. I HOPE YOU WERE ABLE TO ANSWER ALL OF THE QUESTIONS. IF YOU HAVE COMMENTS REGARDING THE QUESTIONNAIRE, OR STUDY, PLEASE FEEL FREE TO NOTE THEM ON THE REVERSE SIDE OF THIS SHEET. YOUR COMMENTS WILL HELP IN REFINING THESE QUESTIONS FOR FUTURE INVESTIGATIONS.

Perceptions of Architects, Superintendents and Principals on the Adequacy of their Training in School Plant Planning

	Coursework as Part of Training		Training Adequate		
	Yes	No	Yes	No	NR
Architects (N=12)	3/23%	10/77%	9/69%	4/31%	-
Superintendents (N=9)	4/44%	5/56%	2/22%	6/67%	1/11%
Principals (N=7)	4/57%	3/43%	6/66%	1/14%	-

Perceptions of Architects, Superintendents, & Principals on the Necessity of Coursework in School Plant Planning

	Coursework is Necessary for...								
	Architects			Superintendents			Principals		
	Yes	No	NR	Yes	No	NR	Yes	No	NR
Architects (N=13)	3	10	0	5	1	7	5	1	7
	23%	77%		39%	7%	54%	39%	7%	54%
Superintendents (N=9)	5	0	4	6	3	0	4	1	4
	56%	-	44%	67%	33%	-	44%	11%	44%
Principals (N=7)	5	0	2	3	2	2	2	5	0
	71%	-	29%	43%	29%	29%	29%	71%	-

Rankings of Primary Participation as Perceived by Architects, Superintendents, and Principals

Mean Rank	Variable	Architect Rank	Superintendent Rank	Principal Rank
1	Architects	1	1	1
2	Supt.	2	2	2
2	Asst.Supt	-*	-	7
2	Citizen Panel	-	6	-
2	PTA	-	6	-
2	Facility Consultant	-	6	-
2	C.D.B.	4	3	3
4	Bus.Mgr	6	6	-
4	Bd of Ed	5	5	3
4	Teachers	6	-	5
4	Custodians	-	6	7
4	Others	-	-	7
5	Principals	6	4	4
6	St.Bd.of Ed	6	6	6

* - where no ranking appears respondants did not select this as (1) Primary Involvement. N=29.